

CLAIMS

1. A battery powered electronic system comprising:
 - (a) a portable battery powered utilization device for operating from battery power during portable operation thereof; and
 - 5 (b) a battery pack having memory operatively coupled with said utilization device for supplying operating power and battery data to said utilization device.
2. The battery powered electronic system according to claim 1 wherein said battery pack having memory comprises:
 - 10 (a) a plurality of electrochemical cells for providing power to said utilization device at a first voltage;
 - (b) an electronic memory device having a communications interface for communicating battery data to said utilization device wherein said electrochemical cells power said memory device at a second voltage; and
 - 15 (c) a voltage clamping device operatively connected to said communications interface for clamping for protecting said electronic memory device from electrostatic discharge.
3. The battery pack having memory of claim 2 wherein said electronic memory device includes volatile memory.
4. The battery pack having memory of claim 2 wherein said electronic memory device includes nonvolatile memory.
- 20 5. The battery pack having memory of claim 2 wherein said electronic memory system includes a combination of volatile and nonvolatile memory.

6. A method of providing operational power to a battery powered utilization
5 device, said method comprising:

- (a) monitoring operational battery pack characteristics;
- (b) storing said characteristics in an electronic memory device contained within
said battery pack as battery pack data;
- (c) monitoring present battery pack conditions;
- 10 (d) retrieving said battery pack data;
- (e) communicating said present battery pack conditions and said battery pack
data to said battery powered utilization device; and
- (f) controlling the utilization of said battery pack by said battery powered
utilization device.

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7. A method for providing operational power to a battery powered utilization device, said method comprising:

- (a) monitoring operational battery pack characteristics;
- 5 (b) storing said characteristics in an electronic memory device contained within said battery pack as battery data;
- (c) monitoring present battery pack conditions;
- (d) retrieving said battery pack data;
- 10 (e) communicating said present battery conditions and said battery pack data to said battery powered utilization device;
- (f) controlling the charging of said battery pack according to said present battery pack conditions and said battery pack data;
- (g) controlling the discharging of said battery pack according to said present battery pack conditions and said battery pack data; and
- 15 (i) controlling the conditioning of said battery pack according to said present battery pack conditions and said battery pack data.

8. A method of providing operational power to a battery powered utilization device, said method comprising:

- (a) monitoring operational battery pack characteristics;
- 5 (b) storing said characteristics in an electronic memory device contained within said battery pack as battery data;
- (c) monitoring present battery pack conditions;
- (d) retrieving said battery pack data;
- 10 (e) communicating said present battery pack conditions and said battery pack data to said battery powered utilization device;
- (f) charging said battery according to said present battery pack conditions and said battery pack data;
- (g) discharging said battery according to said present battery pack conditions and said battery pack data; and
- 15 (i) conditioning said battery pack according to said present battery pack conditions and said battery pack data.

9. A method of manufacturing a battery pack having memory comprising:
- (a) permanently affixing a plurality electrical conductors interconnectively to a plurality of electrochemical cells thereby forming a battery;
 - (b) temporarily affixing electronic components to said electrical conductors;
 - (c) clamping said electrical conductors at a predetermined electrical potential; and
 - (d) permanently affixing said electronic components to said electrical conductors.
10. A battery pack having memory manufactured according to the method as

recited in claim 9.

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